INDIANA DEPARTMENT OF TRANSPORTATION
OFFICE OF MATERIALS MANAGEMENT

LABORATORY EVALUATION OF ANTI-ADHESIVE AGENTS
ITM No. 576-08T

1.0 SCOPE.

1.1 This test method covers the procedure for evaluating anti-adhesive agents.

1.2 The values stated in either acceptable English or SI metric units are to be regarded separately as standard, as appropriate for a specification with which this ITM is used. Within the text, SI metric units are shown in parenthesis. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other, without combining values in any way.

1.3 This ITM may involve hazardous materials, operations, and equipment and may not address all of the safety problems associated with the use of the test method. The user of the ITM is responsible for establishing appropriate safety and health practices and determining the applicability of regulatory limitations prior to use.

2.0 REFERENCES.

2.1 AASHTO Standards.

M 231 Weighing Devices Used in the Testing of Materials

3.0 SIGNIFICANCE AND USE. This ITM is used to determine if the anti-adhesive agent hardens or softens the asphalt material, or affects the adhesive property of the HMA. Approved anti-adhesive agents will be added to the approved Anti-Adhesive Agents list.

4.0 APPARATUS.

4.1 Oven, capable of maintaining temperature ± 5°F (±3°C) throughout the range 140 to 300°F (60 to 150°C)

4.2 Balance, a Class G2, in accordance with AASHTO M 231

4.3 Spatulas and trowels as needed

4.4 Three metal pans approximately 6 in. (150 mm) wide x 10 in. (250 mm) long x 2 in. (50 mm) deep with clean, slightly roughened finishes

4.5 100 mL to 200 mL glass bottles with 10 mL graduations and loose fitting covers

4.6 Thermometer, capable of reading at least 300°F (150°C)

5.0 PREPARATION OF TEST SPECIMEN.

5.1 Prepare the anti-adhesive agent for use as instructed by the accompanying literature from the manufacturer.

5.2 Heat to 275 ± 9°F (135 ± 5°C) a quantity of at least 1200 g of HMA at approximately 5% asphalt content.

6.0 PROCEDURES.

6.1 Film Test.

6.1.1 Pour 5 to 7 g of asphalt material into each of 2 small, graduated widemouth bottles

6.1.2 Rotate bottles to provide a uniform film of asphalt material halfway or more up the side of the bottles from the bottom of the bottles

6.1.3 Fill one bottle to at least the 90 mL mark with prepared anti-adhesive agent

6.1.4 Fill the second bottle with an equivalent volume of tap water

6.1.5 Cover the bottles with loose fitting lids to retard evaporation and place the bottles in an oven at 140 ± 5°F (60 ± 3°C) for 90 ± 15 minutes

6.1.6 Remove the bottles from the oven at the end of the conditioning period, pour off the liquids, and let the bottles cool to room temperature

6.1.7 When the bottles are at room temperature, compare the asphalt material films for changes in adhesive properties by touching the films with fingertips, a spatula, or a stirring rod. Moderate hardening or softening of the asphalt material film or evidence of dissolved asphalt material shall be considered unsatisfactory.

6.2 Mixture Test.

6.2.1 Pour a sample of prepared anti-adhesive agent into a clean dry pan designated as pan #1, and retain about 1/4 in. (5 mm) depth of agent in the pan

6.2.2 Pour a sample of prepared anti-adhesive agent into a clean dry pan designated as pan #2, and drain off the agent

6.2.3 Pour about 1/4 in. (5 mm) depth of tap water into another clean dry pan. This is designated the control pan

6.2.4 Place approximately equal portions of 400 to 800 g of HMA into each of the three pans

6.2.5 Place the three pans with mixture into 275 ± 9°F (135 ± 5°C) oven for 45 to 60 minutes

6.2.6 Remove pans from the oven at the end of the heating period. Let the mixtures cool undisturbed until the mixtures have reached approximately 100 to 125°F (40 to 50°C).

6.2.7 Tilt the pans approximately 45° and rap the pans sharply against a table top to cause the mixture to break free of the pans

6.2.8 Place mixtures on paper

6.2.9 Once the mixtures are placed on the paper, touch the portions formerly at the bottom of the pans with fingertips, a spatula, or a stirring rod in order to compare adhesive properties. Slight hardening or softening of the asphalt material may be allowed, but severe changes of adhesive properties of any portion of the mixtures in pans #1 or #2 shall be considered unsatisfactory.

7.0 SAFETY. Anti-adhesive agents of sufficient hazards as to require the use of protective clothing or the use of respirators shall not be permitted. The technician shall check accompanying literature with regards to safety precautions while using or testing the anti-adhesive agent under consideration.

8.0 REPORT. Following laboratory testing, notification shall be made to the vendor stating that the anti-adhesive agent is either approved or unsatisfactory.